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# USSR Report

AGRICULTURE

No. 1231

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2 May 1980

# USSR REPORT

## AGRICULTURE

### No. 1231

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### SOWING OPERATIONS COMMENCE IN UKRAINIAN SSR

Moscow NII'SKAYA ZHIZN' in Russian 9 Apr 60 p 1

[Article by S. Luzgan (Ukrainian SSR): "The Ukraine Commences its Sowing Operations"]

[Text] Cool weather and abundant snow cover over a considerable portion of the republic's territory combined to postpone the sowing periods to a later time. The temperature is increasing rapidly at the present time and this is creating a great amount of tension out on the spring fields. The farmers are aware that they must carry out their work as rapidly as possible if their obligations are to be fulfilled, obligations which are higher than ever before. This year, 53 million tons of grain, or 1 million more tons than the figure called for in the plan, must be obtained in the Ukraine; 50.25 million tons of sugar beets and 2.50 million tons of sunflower seed are to be sold to the state and more than 1 million tons of potatoes and in excess of 5 million tons of vegetables are to be procured. The livestock breeders have strong plans and thus a requirement exists for procuring a considerably greater quantity of feed than has been the case in past years.

The republic's principal fields are its grain fields. In the planting structure adopted for this year, 17.7 million hectares or more than one half of the entire area under crops have been allocated for the grain fields. The major portion (more than 10 million hectares) will be used for winter crops. More generous amounts of organic and mineral fertilizers have been applied in behalf of these crops than has ever been the case in the past; approximately 1 million hectares were prepared using the non-plow method. Odesskaya-51, Mironovskaya 808, Il'ichovka and Bezostaya 1 wheats, all of which are highly respected, will be planted on the largest tracts. More than 500,000 hectares will be occupied by Akhtyrchanka - an early-ripening, lodging resistant and highly productive variety.

In some oblasts the wintering of the crops took place under considerable fluctuations in the air temperature, which at times fell to critical levels. Organizational and agrotechnical measures have been utilized for the purpose of improving the growth of weakly developed plants. In particular, attention is drawn to the well thought out actions being undertaken by the

specialists in Odesskaya Oblast. They have prepared an agricultural rating for each field showing the density and extent of plant development, the degree to which they are supplied with nutrients and information on the presence of pests. The winter crops were inspected in advance in each area and just as soon as growth was resumed the workers began tending them.

A spring top dressing is presently being applied to the crops in almost all areas. The farmers are carrying out this important agricultural measure in a creative manner: they are taking into account the pre-sowing and autumn applications of fertilizer and the nutrient requirements of each field. In the interest of shortening the schedules, extensive use is being made of aviation and ground equipment. On those areas where the plants are weakly developed, the use of heavy equipment -- tractors and fertilizer distributors of the ROM type -- is prohibited. Extensive use is being made of the root method for applying a top dressing.

Special concern is being evidenced this year for the corn crop. Nor is this a random thing. During a recent scientific production conference held in Khmel'nitskaya Oblast, it was recognized that insufficient attention has been given to this very important grain forage crop in recent years: its plantings have been reduced and its cropping power lowered. On many farms, organic and mineral fertilizers are no longer being applied, the sowing is being carried out late and the plantations are poorly tilled. Today the situation is changing -- corn is now being planted for grain purposes on 2 million hectares in the Ukraine. The industrial technology for cultivating this crop has received general acceptance -- it will be employed on an area of 180,000 hectares. In addition, corn will be produced on 114,000 hectares with minimal expenditures of manual labor.

Importance is attached to the fact that the All-Union Breeding Genetics Institute created the special Odesskiy 11/M hybrid for the industrial cultivation of corn. This new variety is capable of furnishing 65-70 quintals of grain per hectare and it ensures the same stalk height and same ear size and also proper ripening of the ears. The Odesskiy ROMV grain and silage hybrid will also make an appearance on this year's spring fields. It is drought resistant and it became popular during tests carried out in various regions of the country. Using an accelerated propagation method developed by the plant breeders, spetskhosy [specialized farms] in the Prikarpat'sya region, during last summer alone, developed a quantity of Odesskiy ROMV first generation seed sufficient for planting on 800,000 hectares.

Increased attention is required for the cultivation of grain crops, particularly millet and buckwheat. This is dictated by the fact that in recent years the plans for producing these crops have not been fulfilled. But indeed a great amount of experience is available in the Ukraine with regard to obtaining high yields for both millet and buckwheat! Analysis has shown that grain crops produce low yields owing to the fact that proper responsibility is not assigned for them; they do not have a permanent

"master." In other words, they must be cultivated by specialized teams and detachments of machine operators and in accordance with a progressive technology. Greater concern must be displayed for the seed. Although the seed for the republic's spring grain crops has for the most part been raised to 1st class quality, one fifth of the buckwheat seed is still considered to be sub-standard.

At the present time, there are more than 1.9 million hectares of irrigated land in the republic. On this land the leading farms are planting their grain crops, especially corn and also perennial grasses, including alfalfa which furnishes rich yields of valuable feed under irrigation conditions. Unfortunately, this reserve is still not being employed in all areas. Importance is also attached to expanding the secondary and intermediate plantings and, following the winter wheat harvest, obtaining good yields of peas, soybeans, millet and buckwheat from the same areas.

In Vinitskaya, Zaporozhskaya and Khmel'nitskaya oblasts, the selection of seed from the state resources has still not been completed. In Krymskaya, Kirovogradskaya and certain other oblasts, not all of the soil cultivation and sowing units have been staffed with two shifts of machine operators. Although these are exceptional shortcomings, nevertheless if they are not corrected they can adversely affect the tempo of the field work being carried out. The sowing operations have already commenced in the southern part of the republic and the extent of such work is expanding with each passing day. A top dressing is being applied to the winter crops in almost all areas.

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### MOLDAVIAN CROP PROGRESS REPORTED

Kishinev NOVOSTRAYA MOLDAVIYA in Russian 19 Feb 80 p 2

[Article: "February 'Windows'"]

[Text] At the present time the winter crops on more than half of the sown area are in good condition. And only on the tracts which were sown late are the plants in the phase of the third leafing and of the beginning of tillering.

January proved to be colder than usual by one to three degrees with a variation in the minimum air temperatures in the various areas of the republic in the range of  $-12^{\circ}$  to  $-24^{\circ}$  and on the snow surface  $-16^{\circ}$  to  $-29^{\circ}$ . However, the existence of a snow cover on the preponderant part of the territory prevented a lowering of the soil temperature and the depth of tillering below the critical limits.

Thus, the winter crops on the whole in all of the republic's zones are wintering well, and there has been practically no destruction from frost. However, nature is capable of producing more than one "surprise" before the beginning of the spring vegetation, and for this reason it is necessary to conduct constant observations of the state of the crops. On 25 February the regular time for selecting monoliths will be upon us. In those places where the snow cover has come off as a result of the thawing of the soil which began during the first ten days of February (especially on wheat crops) serious fertilizing should be performed at the rate of 45 to 60 kilograms of active nitrogen substance per hectare. Crops which have thickened out well and which did not receive the recommended dose of fertilizer during the fall soil preparations or during sowing are best fertilized in spring when the soil has matured with covers at the depth of the tillering nodes with 30 to 45 kilograms of active nitrogen substance per hectare.

In performing these operations special attention should be given to observing the recommended dose and to an even application of the fertilizer in order to eliminate strips which have already become "classic" on which the crops lodge from too much fertilizer. For early spring

Fertilizing all types of nitrogen fertilizers should be used except urea (carbamide) which should be left for the final top fertilizing. Farm specialists and leaders have to take care of piling up a sufficient quantity of 2,4 D herbicides to treat poorly developed late winter cropped plantings against weeds, windfall, sunflowers, and, especially, sow thistle.

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CSO: 1824

## **RAYON CROP PROGRESS AND WEATHER REPORTING**

### **ROSTOVSKAYA RAYON CROP PROGRESS REVIEWED**

**Moscow TRUD in Russian 6 Apr 1950 p 1**

[Article by G. Lavchenko, Editor of the rayon newspaper ZORI RANYCHA: "The Complexes Will go Out Into the Fields"]

[Text] The winter this year was a cold one. At the beginning of April there was still frost at night and the snow had not entirely come off. But farmers know that spring can suddenly come into its rights and then you have to work hard to keep up with it. The grain growers of Vesselovskiy Rayon in Rostovskaya Oblast have adopted high socialist commitments: to obtain 1/2 quintals of grain per hectare and to create a year and a half's supply of feed. Quite a bit has already been done to fulfill these commitments. The winter crops were sown in the fall at an optimal time on an area of more than 30,000 hectares. The land has been sown with the regionalized and frost resistant wheat seeds "Rostovchanka," "donskaya osteykaya," "severodonakaya," and the new susceptible variety "sernygradka 2" which produces high yields.

Quite a bit was done during the fall and winter to take care of the crops: root and surface fertilization was performed on an area of more than 19,000 hectares and snow retention structures were built. Nevertheless, the cold and relatively free from snow December of last year made its corrections. In order not to end up with a miscalculation the agronomists are digging a snow cover on the fields and checking the state of the crops.

There are no final conclusions yet, but in expectation of reaping every farm is increasing the amount of spring work by 20 to 25 percent. The necessary stock of seeds is being created for this and the amount of sowing equipment is being increased.

In order to successfully perform the spring field work eleven mechanized complexes have been created in the rayon which contain 24 detachments with teams for the preparation of the soil, the delivery of seeds to the fields, and also for the technical servicing of the equipment and cultural and domestic services. These complexes are headed by the notable farmers

of the rayon V. Zhukovskiy from the combine tract Zelenov, A. Filizovskiy and G. Kuvayev from the "Pobeda" combine, V. Shchukin from the combine "Krasnyy Obyed" and others. Special attention is being given to high rates and excellent quality in the work. Quality points, deputy points, and people's control points are being created on all of the farms of the rayon.

The party committees together with trade union organizations and farm leaders have made up and given to all to those who will be working in the sowing plans for organizational and mass political work and the conditions of the socialist competition. These plans provide for a wide use of moral and material stimuli. The best results will be organized for the participants in the sowing sowing.

In the system of universal education where the rayon's farms have created 1,270 mechanics and operators for tractors and combine harvesters. And this means that at the spring sowing the equipment will be used to one and a half to two shifts. This is why it has been decided to perform the sowing of grain crops in 65 to 70 farms.

In addition to grain crops, the rayon is working intensively on raising corn for grain. The corn growers have some few problems. The chief one is that their need for mineral fertilizers in keeping with scientifically substantiated norms is being met by only 40 percent.

And more. An industrial technology of cultivating grain corn is becoming increasingly widespread in the district. This requires modern equipment and harvesters. But the district agriculture administration has not even put the rayon in the harvesters supply plan.

The last preparations for the field work are taking place on the farms. Sowing plans are being made more precise and mutual checks on the readiness of tractors, teams, and farms are being performed. The Vostochniy farmers are ready to meet the spring fully armed and to achieve the highest yields of grain and feed crops during the concluding year of the tenth five-year plan.

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### FIELD WORK PREPARATIONS NEARING COMPLETION IN ROSTOVSKAYA OBLAST

Moscow TRUD in Russian 6 Apr 80 p 1

[Article by G. Levenenko, editor of the rayon newspaper ZORI MANYCHA, Veselovskiy Rayon, Rostovskaya Oblast: "The Complexes Are Being Moved Out Onto the Fields"]

[Excerpts] Winter turned out to be very prolonged this year. The beginning of April and frosts were still occurring at night. Nor had the snow completely disappeared. But the farmers know that spring will make itself known unexpectedly and that at that time we will have difficulty keeping pace with it.

The grain growers in Veselovskiy Rayon of Rostovskaya Oblast have undertaken high socialist obligations: obtain 32 quintals of grain from each hectare and create a one and a half year's supply of feed. A great amount of work has been carried out in the interest of fulfilling these obligations. In the autumn and during the optimum periods, winter crops were sown on an area of more than 30,000 hectares. Seed for the regionalized and frost-hardy Rostovchanka, Donskaya-Ostiataya and Severodonskaya wheats and the new and promising Zernograd ka-2 variety, all of which produce high yields, was placed in the ground.

A great amount of work was carried out during the autumn and winter months in connection with tending the plantings: root and surface top dressings were applied to an area in excess of 19,000 hectares and also snow retention work. But nevertheless the month of December last year, marked by cold weather and only a limited amount of snowfall, introduced its own corrections. In the interest of avoiding miscalculations, the agronomists are moving aside the snow cover on the fields so as to be able to check the status of the winter crops.

Although no final conclusions have as yet been drawn, nevertheless each farm, in a computation for resowing, is increasing its volume of spring work by 20-25 percent. Towards this end, the required supply of seed is being created and the number of sowing units is being increased.

In addition to cereal grain crops, the rayon is intensively engaged in the growing of corn for grain. The corn growers have many problems. Their chief problem -- their requirements for mineral fertilizers, which are based upon scientifically sound norms, are being satisfied by only 50 percent.

There is still one other problem. The industrial technology for growing corn for grain is being employed more and more extensively throughout the oblast. This requires modern equipment and herbicides. But the oblast agricultural administration has not even provided the rayon with a plan for acquiring herbicides.

The last preparations for field operations are being carried out on the farms -- the work plans are being refined more precisely and mutual checks are being carried out on the readiness of the teams, brigades and farms. The Veselevskiy Rayon farmers are fully prepared to welcome spring and to achieve high yields for their grain and forage crops during this final year of the Tenth Five-Year Plan.

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### SEED PREPARATION PROBLEMS IN KRASNODARSKIY KRAY

Moscow PRAVDA in Russian 24 Feb 80 p 3

[Article by V. Prokushov (Krasnodarskiy Kray): "Stored Away for Sowing Purposes"]

[Text] Winter ground winds are still blowing across the Siberian fields. But at mid-day the sun warms the ground, reminding one of the approaching spring period. The Krasnodarsk grain growers are making preparations for their spring field work. A great volume of work must be carried out in the future. The kray's grain and pulse crop farmers alone must sow their crops on 2.3 million hectares.

One of the principal concerns of the farmers is their seed. On a majority of the kray's kolkhozes and sovkhozes, a high level of responsibility is being displayed with regard to the preparation of the seed. For example, the farms in Achinskii, Yermakovskii and Shushenskii rayons achieved 100 percent preparation of their seed bank during the autumn months. All of this seed is either of first or second class quality. Concern has also been displayed for the gold fund of the harvest in Sharypovskiy Rayon.

"Sufficient seed has been laid away for all of the crops" stated an agronomist attached to the local state seed inspection, N. Myasoyedova, "for the most part, all of this seed meets the standard requirements."

The farmers at the Ivanovskiy Sovkhoz are achieving a high culture in their work with seed. Careful thought was given in advance here to the arrangement for the seed plots and to ensuring that the best fields and most favorable predecessor crops were made available for them. At the present time, 1,600 tons of grain are being stored in warehouses for sowing purposes. The lists established here testify to the fact that this seed has undergone laboratory inspection and is fully quality-standardized in terms of germinative capacity, moisture content and purity.

"We are making extensive use of reclaimed land for the growing of grain crops" stated the sovkhoz director, N. Okhrimchuk, "we are obtaining good

fields. The carrying out of strain renovation work with crops is proving to be of great assistance with regard to increasing the return being obtained from the grain fields.

In addition to Orlovka, the traditional variety for this region, the farmers have begun cultivating the bel'ma variety. It furnishes 25 and more quintals of grain per hectare. But we are not neglecting Orlovka, since it has its own particular advantages.

However, proper concern is not being displayed in all areas with regard to preparation of the seed. For example, let us take Nazarovskiy Rayon. Here there are very extensive grain fields and this imposes a great amount of responsibility on the seed production workers. But not all of them have organized their work in a fine manner. The quality of the sowing stock is worse here than in Shat'yovskiy Rayon, which competes against Nazarovskiy Rayon. Thus the Kirovskiy and Avangard sovkhoses prepared only 60-70 percent of their seed grain. Nor was the situation any better at the Pavlovskiy sovkhos. It bears mentioning that it was not too long ago that this farm occupied a leading position. People came here to acquire experience and, in particular, to learn how to work with seed. But today the grain growers have fallen behind, last year, an extremely favorable one, they harvested less grain per hectare than the average for the rayon. This is the result of a low level of farming culture and of a deterioration in seed production operations. Hundreds of tons of seed here are non-quality standardized in terms of germinative capacity, moisture content and purity.

"We lack drivers at two branches" explained A. Kudlay, an agronomist seed producer, "thus we store the grain while it is still damp."

The justification is not very convincing. During the autumn there were three drivers in operation at the sovkhos and they were capable of handling all of the grain. There was also sufficient grain cleaning equipment. It was obvious that the problem derived from other factors - sluggishness and mismanagement.

Similar situations prevail at a number of sovkhoses and kolkhoses in Abrenskiy, Nizhnelingachskiy rayons. For the kray as a whole, approximately 10 percent of the grain and pulse crop seed checked following cleaning did not meet the state standards for quality. This was worse than at the beginning of February last year. The agricultural organs must draw the proper conclusions from these facts and participate more actively in the course of events. Full advantage must be taken of every opportunity for augmenting and improving the seed funds. In particular, importance is attached to organizing the intra and inter-rayon exchange of seed and, with the onset of the spring thaw, the hot air warming and disinfection of the seed.

You reap what you sow. This truth is well known. Today this truth should be recalled by those who fail to display timely concern for the gold fund of the harvest.

## MAJOR CROP PROGRESS AND WEATHER REPORTING

### STAVROPOL'SKIY KRAY GRAIN PLANS, SPRING FIELD OPERATIONS DISCUSSED

Moscow SEL'SKAYA ZHIZN' in Russian 6 Apr 80 p 1

[Article by N. Timofeyev (Stavropol'skiy Kray)]

[Excerpt] - The lands of Krasnogvardeyskiy Rayon, one of Stavropol'skiy Kray's leading rayons, lie in the northwest portion of the kray. This year the farms in this rayon plan to sell 175,000 tons of grain to the state considerably more than the figure called for in the plan.

Prior to the commencement of field work in the rayon, 118 tractor operators underwent training and 46 sowing complexes were created. Conditions were developed for a competition. Discussions were held in each team on the new system for determining the quality of work. Today a machine operator turns over his work and an agronomist evaluates it based upon a 3-point system. If the evaluation is "excellent," then the machine operator receives a 10 percent increase in his wage scale. It bears mentioning that uniform rates have been introduced for all farms in the rayon. If work is carried out in a low quality manner, then the responsible machine operator is required to do it over again.

such a system was employed in connection with the transporting and applying of fertilizers. And the results were immediately apparent. More than 500,000 tons of humus have already been move out onto the fields. This is equivalent to the amount supplied to the ground during all of last year. The figure "1 million" appears for the very first time in the rayon's obligations. This represents the number of tons of local fertilizer to be applied to the kolхоз and sovkhos arable land during the final year of the five year plan.

This year the farmers in Trunovskiy Rayon plan to obtain 27 quintals of grain from each hectare and to sell 70,000 tons of strong and valuable wheat to the state. The work plan called for 48,600 hectares of autumn plowed land to be harrowed in a rapid manner and for early spring crops to be sown on an area of 4,600 hectares and perennial grasses on 10,700 hectares. Thirteen sowing complexes were created in advance for the

purpose of ensuring that the work was carried out in a high quality manner. The rayon party committee assigned 200 communists and 100 agronomists to these complexes and it created party groups. Certification of the chief agronomists and department heads was carried out by a special committee.

Just as soon as it became possible to do so, the sowing units were moved out onto the fields. At the Donskaya Sovkhoz, during the period of the February "windows," an additional sowing of alfalfa was carried out and the autumn plowed land harrowed and, at the present time, the work concerned with applying a top dressing to the winter crops and sowing the pulse crops is nearing completion. The principal task of the sovkhos agricultural service is that of obtaining 11,210 tons of food units. At the Sovkhoz Imeni Kirov, 100-150 hectares of peas, oats and soybeans were sown daily on a selective basis. At the present time, all efforts are being directed towards applying a top dressing to the wheat.

The delayed spring allows no time for sluggish actions. Commencing with the very first days of spring, a majority of the kray's rayons and farms have been characterized by a high work tempo and this has made it possible to apply a top dressing to 1.4 million hectares of winter wheat and to sow the spring crops during the best periods. The farmers are competing to obtain, during the last year of the five year plan, no less than 24 quintals of grain per hectare, to raise the gross production of grain to 4.6 million tons and to grow and procure 1.05 million tons of sugar beets and 150,000-170,000 tons of corn. This task lies within the capability of the grain growers in Stavropol'skiy Krai.

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### BRIEFS

**CORN SEED SHIPMENTS:** Voronezh, 8 Apr. The collective of the seed grading department at the Rossosh' elevator has completed its preparation of corn seed for sowing. Approximately 1,000 tons of the amber grain, sorted by fractions and chemically disinfected, have been shipped to farms throughout the oblast. According to laboratory data, 80 percent of the seed is categorized as being in the first class of the sowing standard. [Excerpt] [Moscow SEL'SKAYA ZHIZN' in Russian 9 Apr 80 p 1] 7026

**SOWING OF EARLY GRAINS:** Voronezh. A check on the readiness for spring sowing operations has commenced on farms in Pavlovskiy Rayon -- one of the oblast's southernmost rayons. A public committee has assigned a high grade to the work performed by the Дружба Колхоз. The decision was made to complete the sowing of early grain crops in just 70 working hours. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 25 Mar 80 p 1] 7026

**AIRBORNE TOP DRESSING:** Belgorod. The "winged grain growers" -- pilots from Belgorod, Kostroma and Smolensk -- have commenced applying top dressings to the winter crops on a mass basis. Mineral fertilizers are being applied to those wheat and rye fields on which the snow has disappeared. [Text] [Moscow SOVETSKAYA ROSSIYA in Russian 25 Mar 80 p 1] 7026

**MARI ASSR GRAIN PLAN:** Yoshkar-Ola, 8 Apr. The farmers in the Mari ASSR have vowed to obtain 18 quintals of grain per hectare this year. Almost 17,000 machine operators are preparing to go out onto the fields at the present time. All of the sowing units will be operated in two shifts. Towards this end, approximately 5,000 individuals are studying and improving their skills at 15 professional-technical institutes and their branches and departments. Workers from plants in the city of Yoshkar-Ola are mastering the profession of tractor machine operator. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 9 Apr 80 p 1] 7026

**WINTER CROP TOP DRESSING:** Cheboksary, 8 Apr. Last autumn the farmers in the Chuvash ASSR over-fulfilled their plan for sowing winter crops. The best regionalized varieties were used -- Mironovskaya-808 winter wheat and Saratovskaya-4 rye, which produce high yields in the non-chernozem zone. The status of the crops is fine in all areas. The work of applying a top

decreasing in total eggs per summer egg laying female from 110,000 to 100,000. The first to arrive was in the Florida area the summer of 1950 in Alachua, Bay County, Duval County, and Volusia County. There are two methods of planting in being grown now and a third in two quadrants of nitrogen and phosphorus fertilizers. [Text] [Newspaper "DAVA ZHIZN" in Russian 7 Apr 50 p 1] 1950.

HYDROPONICALLY GROWN TOMATO. Matanzas. 7 Apr. - now has disappeared from the streets and in the pig raising facilities of the archipelago. There is an abundance of vegetable grown food. It is being grown using the hydroponic method. Rats and cats are being grown for the purpose of obtaining a top dressing. The plants are illuminated by fluorescent lighting. The birds can be fed to animals 10 days after it was born. The top dressing obtained at the archipelago from artificial manure is fed to 1-2 month old young pigs. It is an additive when it possible to increase the average daily weight increase of the animals to 100 grams. The animals develop very rapidly and reach 1 kilogram in a lesser degree. Farms throughout the island are using the birds obtained by means of the hydroponic method for preparing a vitamin paste for adding to the livestock feed. [Text] [Newspaper "DAVA ZHIZN" in Russian 11 Apr 50 p 1] 1950.

ORGANIC FERTILIZER IN FLORIDA. Matanzas. The island's farmers have realized that plan for applying organic fertilizers ahead of schedule. Approximately 1 million tons of goat manure were used and sent to the Florida. The organic materials were delivered by specialized detachments consisting of more than 1,000 workers and motor vehicles. The machine operations have required to apply more than 1 million tons of fertilizers for the entire land area and above the plan. [Text] [Newspaper "DAVA ZHIZN" in Russian 6 Apr 50 p 1] 1950.

DIFFICULT WINTER CONDITIONS. Matanzas Area. The livestock breeders in the Matanzas Area could not recall a more difficult wintering period than the one experienced this year. A hard winter which arose as a result of a summer drought, prolonged cold weather, dry conditions and other aspects of the weather, was not as serious as it was in the past of the last winter. At the present time, the young stock are being accepted not in the distant pastures. The sheep and goats must be fed and raised more than 1 million lambs and almost 100,000 calves. [Text] [Newspaper "DAVA ZHIZN" in Russian 3 Apr 50 p 1] 1950.

KHABAROVSKY KRAI FARM CONDITIONS. Khabarovsk. Apr. In the northern part of the Primorsky Krai region, in the zone of the Khabarovsk Territory, the temperature falls at night to minus 20 degrees and in the southern region of Khabarovsk Krai the busy period of spring field work has already commenced. The grain grows in Khabarovsk and Khabarovsk regions have some grain crops on hundreds of hectares of fields. Work later must be performed during the spring period of the first year of the 1950 year plan, such as the matter of the hay is completely finished. The fertilizer method is being employed not only in all areas. All types of the spring campaigns.

are headed by experienced specialists. This year the grain producers have  
managed to obtain no less than 17 quintals of grain per hectare. All of the  
required conditions are available for accomplishing this. High quality  
standardized seed and mineral fertilizers are available and the sowing and  
soil cultivation equipment has been prepared. Special attention is being  
given to the quality of the field work being carried out. The grain crops  
are being sown using the crossed or close drill sowing methods and with  
simultaneous applications of mineral fertilizer and packing of the soil  
[Text] [Moscow SSSR'SKAYA ZHIZN' in Russian 6 Apr 80 p 1] 7026

**ASHTUBINSKAYA' RICE CROP PREPARATIONS.** By the beginning of the sowing the  
number of rice growing lines and teams in the oblast had increased to  
100. This is connected with a further expansion of plantings of the  
valley grain in the Volga Ashotubinskaya flood plain. They will occupy  
55,000 hectares. Intensive preparatory work is now being conducted over  
the entire area. The main leaders are on the alert. For now the land  
improvement specialists who put the irrigation system into working order  
are repairing the hydrotechnical installations. [Text] [Moscow GIBOR  
in Russian 8 Apr 80 p 1] 7059

**STAVROPOL' GRAIN CROP.** The Stavropol' mechanization experts have begun  
the fertilization of the winter grain crops in accordance with harvest  
ecology with the root application of mineral fertilizers by means  
the experience of advanced kolхозs and sovkhozs is convincing about  
the effectiveness of this agrotechnical method. Last spring almost one  
fifth of the wheat crops were fertilized in this manner. In the end  
the additional yield compared to scattering granules on the soil surface  
exceeded three quintals per hectare. This year it is planned to fertil-  
ize crops on an area twice as large as last year's by the root fertiliz-  
ation method. [Text] [Moscow GIBOR in Russian 8 Apr 80 p 1] 7059

**ASHTUBINSKAYA' CROP REPORT.** The cold held on in the lower Volga, but on  
the kolhoz "Zarya Kommunistov" in Kharabulinskly Rayon, without waiting  
for the warm weather, the fertilization of the winter crops and of  
perennial grasses was begun. This work is being performed by a mechanized  
detachment. The mechanization specialists are putting 1.7 quintals of  
fertilizer on each hectare of winter crops and 7 quintals on the  
grasses of pastures. Within a few days the farmers fertilized all of the  
winter crops and almost one half of the perennial grass. Other farms in  
the rayon have also begun this work. [Text] [Moscow SSSR'SKAYA ZHIZN' in  
Russian 6 Mar 80 p 1] 7059

**ACTIVE SPRING FIELD WORK.** The farmers of the Balakh ASSR are beginning  
their spring field work. On the southern farms, where conditions permit,  
selective irrigating is being performed and the aircraft crews of agri-  
cultural aviation are fertilizing the winter crops. Mineral fertilizers

have already been applied to 4,000 hectares. The work plans for the spring sowing provide for a further expansion of the tractor experience in using equipment. Two hundred sowing detachments have already been formed, and many farms have trained qualified cadres in the system of vocational and technical education and also at courses and in classes of mechanization specialist education for two shift work by the equipment. It has been planned to sow the early spring crops in the republic in a short period of time - in 100 hours. [Text] [Moscow BRL'NEAYA ZHIZN' in Russian 3 Apr 60 p 1] 1959

**SUGAR BEET CROP PREPARATIONS** The district's sugar beet farmers have completed the formation of sowing detachments. The mechanization experts will have to occupy the largest area in recent years with sugar beet seeds - 130,000 hectares. All of the sowing equipment has been carefully repaired and adjusted. Precision sowing which was developed in the Ukrainian Scientific Research Institute of Agricultural Machines Building will be widely used for the first time in Pskovskobly, Pechelavskiy, Volkovskiy, and other rayons. The new machines place the seeds in the ground in a much more even manner, which later makes it possible to reduce to a minimum the labor-consuming work of thinning out shoots. [Text] [Moscow BRL'NEAYA ZHIZN' in Russian 8 Apr 60 p 1] 1959

**LITHUANIAN POTATOES** All of the farms of Lithuania have been supplied with tubers of high yield varieties of potatoes. They have been given a great deal of help here by their traditional partners in socialist competition - the farmers of Belorussia who have shared with them the "gonyak" variety which has given an excellent amount of food. This spring it will occupy one tenth of the republic's potato fields for the first time. The chief supplier of the seeds of these promising varieties has been Varenokiy Rayon where the belokozas and workhorses which are specialized in the production of seed potatoes are basically concentrated. [Text] [Moscow BRL'NEAYA ZHIZN' in Russian 8 Apr 60 p 1] 1959

**WINTER CROPS** The farmers are using every favorable day to fulfill the winter crops and to prepare local fertilizers. Every day as many as 30 airplanes and helicopters of agricultural aviation and hundreds of tractor battalions are busy with the application of manure and the transport of organic fertilizers. In Belozerskiy, Izhmorskiy, Pechelavskiy, and Pskovskiy Rayons the assignment for fertilizing the winter crops has already been fulfilled. [Text] [Moscow BRL'NEAYA ZHIZN' in Russian 7 May 60 p 1] 1959

**WINTER CROPS PREPARATIONS** The fertilizing of the winter crops with nitrogen fertilizers is in full swing in the district. While a light snow cover is still on the fields the mechanization experts are applying fertilizers to the thawing ground with the help of snows. The farmers are also being helped by the fliers of agricultural aviation. This work is being performed in an organized manner on the belokozas and

skykhovskiy, Pustomyayevskiy, Samarskiy, Samarskiy-Nizhniy, and Nizhnyayevskiy Rayons where 90 to 95 percent of the winter grain crops have already been fertilized. On the average, fertilizer has already been applied to every third hectare in the district. [Text] [Moscow SRI'SKAYA ZHIZN' in Russian 19 Mar 80 p 1] 1959

CHERNOVITSKAYA OBLAST' CROP PREPARATIONS All of the measures regarding increasing soil fertility and protecting plants against weeds and pests have been taken up at the Kubovskiy by detachments of the Chernovitskaya Oblast' "sel'skookhozhnitsa" Production Association. The newly created subdivisions have directly employed progressive methods of organizing labor which have at their basis the experience of the kolkhoz workers. In order to fulfill large orders from kolchozses and workhousess the detachments unite their efforts for a specific period of time. Thanks to this the equipment is loaded better and the work is speeded up and performed with better quality. Thus, in most of the rayons, the assignment of the first two months of this year to deliver fertilizer to the fields was fulfilled by 100-160 percent. [Text] [Moscow SRI'SKAYA ZHIZN' in Russian 6 Mar 80 p 1] 1959

ARMENIAN POTATOES The farms of the Araratkaya Valley, the grainery of Armenia, have completed the sowing of early potatoes in a brief period of time. The mechanization experts were helped in performing the work in ten days by equipment which had been readied in time and by a wide use of the kolkhoz method. The planting of the tubers was rapidly completed by the farmers of Nakhichevskiy Rayon. The republic's second holders for the harvesting of this crop. Seeds of only high condition have been put into well fertilized soil on an area of more than 10,000 hectares. [Text] [Moscow SRI'SKAYA ZHIZN' in Russian 8 Apr 80 p 1] 1959

CHINESE CROP PREPARATIONS The delayed spring demanded that the entire amount of spring work -- the sowing of early grain crops and grasses and the preparation of the soil for corn, rice, and other late crops -- be performed almost simultaneously. In view of the situation, it was necessary to make urgent corrections in the plans and to seek reserves for increasing the productivity of each machine. At a meeting of the district party aktiv it was decided to complete the sowing of the early grain crops in two to three days and to perform the field work around the clock. In order to help the field workers additional tractors and team production were sent to the kolchozses and workhousess from cities and workers' settlements. The farmers of the Chinese have committed themselves to obtain during the concluding years of the tenth Five Year Plan 12-9 quintals of grain per hectare and to bring the green grain harvest to 2,100,000 tons. As early as the fall a good basis was laid here for the future harvest. Winter crops which produce the basic grain in the district occupied an area of 600,000 hectares. And what is important is that the difficult weather conditions which did not permit the performance

of work to prepare the spring crops for sowing were made full use of here for fertilizing the crops. With the help of aviation and land methods nitrogen fertilizers were applied to 500,000 hectares. This work is still continuing. Babichlensky Rayon can serve as an example of how it is possible to increase the yield of grain fields through the consistent performance of the recommended agrarian methods. Whoever has been here has probably given his attention to the steeply placed mountain slopes. It is clear that it is difficult to retain water on such fields and, this means, to grow crops. However, the rayon is constantly getting the highest grain harvests in the Gubman. Even last year the Babichlensky farmers obtained 33 quintals per hectare, while a season ago they obtained 44.1 quintals. This year from the first days of spring literally every hour of good weather has been used in the rayon and it was the first in the oblast to complete the sowing of early grain crops. Fertilizers, chemical weeding, protecting plants against pests and diseases, the effective use of irrigation, and the selection of high yield varieties and hybrids. This is the basic reserve for increasing yields in the oblast. Preference is given to those cultures which under equal conditions produce the highest yield. For example, grain corn. Last year an average of 43.9 quintals was obtained, and on irrigated fields the figure was 66.6 quintals of grain per hectare. Now 60,000 hectares of arable land have been assigned to this valuable crop. Soy beans will occupy 15,600 hectares; the farmers have committed themselves to raise a 20 quintal yield of this crop. A decisive course aimed at the creation of a solid feed base has been taken. During these days as much concern is being shown for feeds as for grain and there are increased sowings of boughm, high yield varieties of barley, yeast, alfalfa, vetch, and feed sugar beet. Spring is announcing itself with growing confidence on the Gubman land not only with its breath of warmth, but also through the rumble of tractors. Every day around 2,000 of them are brought out onto the fields and they are loaded by two shifts of operators. During the night the soil is prepared on the farms, and during the day there is sowing. [Excerpt] [Moscow NE 'Pravda ZHIZN' in Russian 3 Apr 80 p 1] 1959

IVANOVSKAYA OBLAST FERTILIZER WORK The transportation of organic fertilizers is moving ahead successfully in the oblast. Last year's schedule has been covered by more than 900,000 tons. Moreover, the work rates are increasing. In January around four,000 tons of local fertilizers were delivered to the fields and in February more than 900,000 tons. The March assignments are also being overfulfilled. Transportation has employed in it 169 mechanized trucks and detachments which are equipped with 1,127 tractors and more than 190 trucks (substantially more than last year). The tallying up of the results of the completion of the mechanization specialties and delivery is performed every ten days. In the lead are the farmers of Iykovskiy, Shuyakly, and Ivanovskiy Rayons. [Text] [Moscow NE 'Pravda ZHIZN' in Russian 11 Mar 80 p 1] 1959

ТАМБОВСКАЯ ОБЛАСТЬ. УДОБРЕНИЕ ЗЕМЛИ. On the western front the work and activity of the economy which is led by the Honored Agronomist of the RSFSR and Deputy to the RSFSR Supreme Soviet A. Gubarev, an average of 9 to 11 tons of organic fertilizer per hectare is applied year after year. And it is not surprising that here, even during last year which was an arid one, more than 50 quintals of grain crops per hectare and 90 quintals of dry green mass was obtained on sandy earth. The example is a convincing and instructive one. However, such farms, to tell the truth, were scarce in Tambovskaya Oblast'. On many kolchozes and sovkhoses attention was not given to organic fertilizers and, as a result, the seeds of tons of grain failed to be harvested. And then a change occurred. Last year the oblast's farms applied 4-6 tons of manure per hectare. Four times more than two to three years ago. "This year," the chief of the agriculture section of the CPSU oblast' Party, "they will apply no less than 6 tons of manure and peat per hectare. More than 80 overall mechanized detachments for getting and delivering fertilizers have been created on the kolchozes, sovkhoses, the subdivisions of "selkhozskhulki" and "selkhozskhulki," and also on an inter-farm basis." As a result, during the first three months of this year, more than two and one half million tons of organic fertilizers have been taken out to the fields -- as much as was taken out previously in a year. It should be noted that, in addition to this, the extraction of peat and the preparation of peat-manure composts is increasing. [Text] [Moscow IZVESTIYA in Russian 8 Apr 60 p 1] 1959

ТАМБОВСКАЯ ОБЛАСТЬ. СЕВ ПРИБЛИЖАЕТСЯ. The sowing of early grain crops has begun in the Primor'ye. The workers of the "Pobedyevskiy" sovkhos in the fertile Bagdat'skaya valley have sown more than 400 hectares in a day. Compared to last year, sowing in the krai was delayed on account of unexpected spring snowfalls, and the farmers are trying to perform it rapidly. Well-repaired equipment, sufficient seeds, and the existence of large areas of soil which were plowed up in time are helping to perform the sowing in an organized and high quality manner. [Text] [Moscow GDDK in Russian 8 Apr 60 p 1] 1959

АЛТАЙСКИЙ КРАЙ. СЕВ ЗЕРНА. After having completed repairs on the soil cultivation and sowing equipment, the mechanization specialists of the Altay began to put the machinery and implements together. Almost 1300 sowing complexes which have been set up in keeping with the tractor method have been brought out onto the fields. They will be led by experienced grain farmers who have undergone educating in courses of universal mechanization specialist training. Most of the farms have begun the treatment of the seed material, air and thermal heating. More than 81 percent of the grain crop seeds correspond to the first and second class of the sowing standard, which is almost 10 percent more than last year's level. [Text] [Moscow SGT'SKAYA ZHIZN' in Russian 19 Mar 60 p 1] 1959



GOR'KOVSEAYA OBLAST FERTILIZATION WORK - The oblast's mechanized detachments and links have delivered almost 6 million tons of organic fertilizers to the fields. This is more than during the same period last year. On the kolkhoz Iment the 60th Anniversary of October in Gorodetskiy Rayon 23 tractors with trailers are engaged in transporting fertilizers and composting. Whereas last year each hectare on the farm received 14 tons of composts, this year this figure will triple. [Text] [Moscow SLE'SKAYA ZHIZN' in Russian 7 Mar 80 p 1] 2959

CSO: 1826

## LIVESTOCK FEED PROCUREMENT

### USE OF GRAIN IN LIVESTOCK FEED PROGRAM REVIEWED

Moscow SOVETSKAYA ROSSIYA in Russian 11 Apr 80 pp 1-2

[Article by V. Baturin, Candidate of Economic Sciences. "Grain -- A General Foundation"]

[Text] The task of cultivating a crop is by no means an easy one. Each quintal of grain obtained involves a tremendous amount of labor by the workers, joys and disappointments, sleepless nights and physically tense days. Quite often a grain grower is confronted by climatic adversity and at such times the work becomes even more tense and difficult.

The campaign to obtain grain never abates in the rural areas. Sowing operations are unfolding at the present time, the farmers are applying top dressings to their winter crops and the last preparations prior to the commencement of the 1980 harvest campaign are nearing completion. Last year the crops out on the Russian fields were harvested by 400,000 combines and 500,000 motor vehicles and a tremendous army of machine operators, kolkhoz members and machine workers and also city residents worked out on the fields. The production of 1 ton of grain involved an expenditure of 10-15 manhours and a cost of 70 rubles. But the value of the grain is measured not only in terms of labor and resource expenditures. First of all, grain is considered to be the principal food product required by man. It is an important part of the country's economic might.

Grain production is constantly increasing in the Russian Federation. Whereas 15-20 years ago the republic's farms harvested 65-70 million tons of grain, today the figure is twice as great during some years. Nevertheless, we are still experiencing a shortage of grain, especially forage grain. Just as in the past, an important agricultural task is that of increasing grain production in every possible way.

However, the grain deficit can be reduced if we thoroughly analyze and study in detail the manner in which the crops should be utilized. A most important lever for improving the republic's grain balance is that of raising the effectiveness of use of grain in animal husbandry. This branch

and almost the principal consumer of grain. Compared to the seventh Five-Year Plan, when 14 percent of the gross yield of grain was used for forage purposes, during the Ninth Five-Year Plan -- 50 percent, and during 4 years of the Tenth Five-Year Plan -- 54 percent.

Last year, grain consumption for forage purposes increased by almost threefold compared to 1965. It would seem that a corresponding increase would take place in the production of animal husbandry products as greater quantities of grain were consumed in the form of cattle feed. Actually, this did not occur. The rates of growth for the consumption of grain forage exceed by twofold the rates for an increase in the production of animal husbandry products.

During this period of time, the structure of the feed base changed considerably. Whereas in 1965 grain forage constituted 24 percent of the overall volume of feed expended, 5 years later -- 15 percent, and in 1978 -- 10 percent.

Some explanation can be given for the unjustified growth in the consumption of concentrates. First of all, such growth derives from the substantial changes that have taken place in the distribution of grain feed among the branches of animal husbandry. Compared to 1965, when the republic's cattle consumed one third of all grain used in animal husbandry, commencing in 1970 practically the same quantity of grain feed was fed to the cattle as was supplied to the hogs and poultry taken together. Commencing in 1965, the production of succulent feed increased by only 13 percent, hay production decreased by 16 percent and the consumption of pasture feed by 3 percent.

Haylage began to constitute a large proportion of the coarse feeds. However, owing to violations of the technology for harvesting and storing this crop, its quality is low and in terms of its nutrient content and moisture content it is on a par with silage in the majority of instances.

Almost one half of the mixed feed being produced by industry at the present time is being used to cover the shortage in other feeds for cattle and this is completely incorrect.

In his report delivered before the July (1978) Plenum of the CPSU Central Committee, Comrade L. I. Brezhnev emphasized that "a completely incorrect trend is being observed in a number of areas. The leaders of some farms, rayons and even oblasts are failing to display proper concern for increasing the production of hay, haylage, silage and root crops, or for improving their quality. They attempt to cover their feed shortage through the use of concentrates, quite often by means of grain obtained from state resources. As a result, the consumption of grain for cattle feed increases to an excessive degree and the use of other types of feed even decreases."

The CPSU Central Committee and the USSR Council of Ministers, in the recent decree entitled "Additional Measures for Increasing the Production of

"Grain and Concentrated Feed in 1960 and Raising Their Quality," once again directed the attention of the party, soviet and agricultural bodies to the fact that annual under-fulfillment of the procurement plans for coarse and concentrated feeds is one of the principal causes of low productivity in specialized animal husbandry and one which results in a considerably over-expenditure of grain and this cannot be tolerated in the future.

According to estimates, grain consumption for the purpose of compensating for shortages in coarse, concentrated and pasture feeds amounts to an average of 10-15 million tons annually throughout the republic.

In many regions a concentrated type of animal feeding is beginning to predominate in cattle husbandry. Let us take Yaroslavl'skaya Oblast for example. Whereas earlier the cow rations here contained 20 percent hay, the same amount of concentrated feed, pasture feed - 45 percent and concentrates - 15 percent, at the present time the hay proportion has fallen to 7 percent, pasture feed has been reduced by almost 50 percent and the proportion of concentrates has been doubled. For one kilogram of milk the kolkhozes and sovkhozes in Saratov'skaya, Vladimir'skaya, Ivanov'skaya and a number of other oblasts are expending two times more concentrated feed than called for in the norm.

The concentrated type of feeding is being introduced unjustifiably for the fattening of young cattle stock at many farms in Kostrov'skaya Oblast. On some of these farms the proportion of mixed feed in the rations reaches 60-70 percent. At the same time, a considerable quantity of grain, coarse and concentrated feed can be obtained here through the efficient use of irrigated land. Thus the possibility exists of sharply reducing grain expenditures for forage purposes.

An increase in the consumption of grain feeds did not exert a substantial effect on the productivity of the cattle. For the RSFSR on the whole, the average milk yield for a cow increased by only 11 percent. Similar results were obtained in the case of weight increases of young stock during fattening operations.

For the same volume of cattle husbandry products which the republic's kolkhozes and sovkhozes are producing, in accordance with the zootechnical norms, one and a half times less grain should be allocated than is being consumed at the present time. Obviously, sufficient amounts of concentrated and coarse feeds must be available.

To expend such a large quantity of grain forage for an annual milk yield per cow of 2,000-2,500 kilograms of milk is nothing more than sheer waste. Moreover, the predominance of concentrates in the ration for cows, which is poor in terms of both coarse coarse and concentrated feeds, leads to a disturbance in the protein and mineral exchange, to diarrhoea, to an increase in the fatness of animals and to a reduction in the periods of annual utilization of cows. This is why serious attention must be given to the production of high quality coarse and concentrated feeds.

The proportion of concentration in the ration for pigs has, for example, declined from 100 percent in 1900 to approximately 70 percent, at the present time it is approximately 50 percent and the daily weight gains are not too low. Should the farms are producing only 100% potatoes and other crops, then the ration for pigs is 100% potatoes. In the Khabarovsk Oblast, for example, 65 percent concentration and at the present time 50 percent. In Khabarovsk, Khatanga and Khatanga oblasts, the proportion of the concentration is raised from 75 to 90 percent.

For example, for the example in this type of feeding for pigs in the introduction of a concentrate, which is mixed with a concentrate type of feeding. Obviously, when feeding with this type of feed, the method for selecting the third type of feed (concentrate) of grain. Towards this end, more extensive use should be made of potatoes, alfalfa, pine needles, grass meal, pea straw and other additives to the ration for pigs. For example, mixed alfalfa in the form of mixed potatoes, grain, needles and grass is being used with great success on pig farms in the Far East. Last year, 10 tons of this mixture were introduced per pig and this is of great assistance with regard to ensuring that the animals are supplied with food.

In pig-breeding at the Khabarovsk Oblast, in Khabarovsk Oblast and in a number of other farms throughout the republic have increased to a considerable degree the proportion of concentrate feed in the ration.

This necessitates a considerable amount of attention and support. The scientific, technical and planning organizations, during the course of developing a feeding plan for the enterprise, construction plans and the modernization of pig-breeding enterprises, should call for a type of feeding for the animals that involves the use of grain and other types of feed as well.

We must study closely those farms where concentrates are used. At the present time, only 30 percent forage is being fed in the form of artificially balanced feed. Actually, there is not enough cake, sprat, nutrient yeasts, fish, bone and grass meal, salt, chalk and other additives for the planned volume of mixed feed production. The mixed feed plants still substitute grain for all of these components and thus the consumption of grain is quite high.

In some foreign countries having a well developed animal husbandry system the proportion of grain from grass and pulse crops in mixed feeds amounts to only 70-80 percent. The remaining portion consists of various non-grain additives. In our case the situation is just the opposite, the non-grain group in mixed feeds amounts to an average of only 10-15 percent, with the remainder being replaced by grain.

The party's position toward the Khabarovsk Oblast in the introduction of production capabilities and in increasing the production of feeds of biological substances has been criticized repeatedly in the press. There are practically unlimited raw material resources for their production in the

reportable. There is not being made of a tremendous quantity of waste products from the timber and wood working industries and from the felling of trees and shrubs. If the mixed feed industry could be supplied fully with the non-grain components, then an additional million tons of mixed feed could be produced without having to add grain.

By no means is full use being made of the waste products of the meat and dairy industry. The average yield of meat and bone meal for the branch amounts to 60 kilograms per ton of processed bulk, while at the same time individual enterprises of the meat industry are obtaining four times less of this valuable raw material for mixed feeds.

It is obvious that the mixed feed industry must very quickly and sharply increase its production of non-grain components, additives and premixes. This will make it possible to reduce considerably the consumption of grain forage and it will improve the quality of the mixed feeds. Certainly, this is not an easy task. The production capabilities must be increased, the enterprises of the meat, sugar, dairy and microbiological industries must be supplied with suitable equipment, raw material resources must be found and so forth. And this must be done. A steady increase in the production of grain is an equally difficult task. An increase in the production of feed additives will make it possible to expend grain more rationally and, even more important, it will effectively promote an increase in animal husbandry output.

State Commission should make its position known with regard to this important work. Its workers, in light of the requirements set forth during the November (1979) Plenum of the CPSU Central Committee, should have displayed initiative and, in the plans for the new five year plan, called for the development of all branches working for the mixed feed industry.

State Ministry [Ministry of Procurement] must perform in a more active manner in connection with the extensive use of non-grain additives. This Ministry has at its disposal raw materials and all of the components of the mixed feed industry. However, its workers, instead of ensuring the deliveries of raw materials, often elect to follow an easier path - to use grain in place of the components in short supply. Very little attention is being given to developing new recipes and technologies for producing mixed feeds containing non-grain components.

Importance is also being attached to the proper use of mixed feed. Every attempt must be made to ensure that each kilogram of mixed feed furnishes a considerable increase in animal husbandry output. At the present time, more than 1 million tons of mixed feed are scheduled to be released annually to kolхозes and sovkhozes, in the form of complete rations, for supplying the state with sugar beets, sunflowers, flax and other farming products. On a par with sugar, grain appears as a gauge of the value of output. Such a computational method could be justified during a period of commodity

production, but under conditions involving commodity money relations.

large kolkhozes and sovkhoses expect to obtain concentrates by means of barter from state institutions and they display no concern for increasing the production of grain and feed on the spot. On a number of farms in Amurskaya and certain other oblasts, for example, there have been frequent instances in which the supply of concentrates, taking into account the grain due in the form of counter sales, exceeds the requirements by 1.5 times.

However, it should be borne in mind that the quantity of feed often exceeds at farms where animal husbandry is conducted on a low level and where the feed is utilized at these kolkhozes and sovkhoses in an inefficient manner. At the same time, many specialized farms remain without concentrates despite the fact that mixed feed consumption for the production of a unit of output is 2-3 times lower here. If 1.6 million tons of mixed feed which are scheduled to be used for feeds on a planned basis were instead allocated for the purpose of animal husbandry output, it would be possible to obtain 1 million tons of beefsteak or pork, or roughly 1.5-2 times more than at non-specialized farms.

It is our opinion that the existing method for distributing concentrates should be replaced. At the present time, they are frequently being allocated for the purpose of covering a shortage in coarse and succulent feed which the farms are not producing. Such concentrates should be allocated first of all to those large-scale specialized animal husbandry enterprises and farms which lack the conditions required for producing adequate quantities of grain and other feed. The kolkhozes and sovkhoses in all areas must fully satisfy their own feed requirements using their own resources. Coarse and succulent feed must not be replaced by concentrates, just as grain must not be replaced by vegetables, potatoes or other products in the food of humans. There is nothing that can replace grain and thus it must receive the proper care.

The problem of feed protein has become more acute in recent years. A large quantity of grain is being made available to animal husbandry in order to compensate for the protein deficit in the feeds. This also takes the form of grain losses.

Analysis has shown that an increase in the cropping power of agricultural crops alone, including grain crops, will not solve the protein problem. Such a course will increase the gross yield of feeds with no substantial change taking place in their quality. Thus, in many oblasts, krais and autonomous republics, the structure of the areas under crops must be reviewed and the plantings of high protein crops expanded.

On an international scale, priority importance is attached to soybeans with regard to solving the protein problem. Assuming that proper attention is given to this crop, it can play a substantial role for us in augmenting our high-value protein resources. The cropping power of soybeans in the Far East can be raised by 1.5-2 times merely by lowering the acid content



## LIVESTOCK FEED PROCUREMENT

### THE PROTEIN LEVEL IN UKRAINIAN FEED

Elav 011'01'01 VNIIT In Ukrainian 2 Feb 80 p 2

[Article by A. Zinchenko, head of Ukrainian Zonal Scientific Control Laboratory, All Union State Scientific Control Institute of Veterinary Preparations, USSR Ministry of Agriculture, candidate of veterinary sciences, and A. Tkachov, candidate of biological sciences on: "Protein in Mixed Feed: Why Animal Origin Feed Is of Low Quality"]

[Text] The republic's Ministry of Meat and Dairy Industry enterprises produce very valuable feed of animal origin--meat bones and bone meal, a pure milk substitute for calves, powdered milk, etc.

The main consumer of meat bone meal is the mixed feed industry, producing mixed feed enriched with proteins and amino acids to satisfy the growing needs of kolchozes and sovchozes farms.

The effectiveness of using feed of animal origin in fattening cattle and poultry and also while raising young stock is justified by its high assimilation rate--92 percent. This feed is rich in proteins, and mineral elements, especially phosphorus and calcium in the required proportion. It contains quite a bit of vitamin, choline, vitamin B<sub>12</sub>, fat dissolving vitamins E, A and D.

Scientists at the Ukrainian Zonal Scientific Control Laboratory of the All Union State Scientific Control Institute of Veterinary Preparations of the USSR Ministry of Agriculture, together with specialists from the Ukrainian State Standard Committee, checked a number of meat and dairy industry enterprises. A considerable number of enterprises fulfill the requirements of the standard technical documentation and state standards.

At the Vagutyn dairy, where V. I. Kaplanchik is director, a pure milk substitute for calves is produced and sent to kolchozes and sovchozes in the Kiev area. During the last few years no complaints were received at the enterprise about the preparation. Its quality is high, mostly top grade. The whole production is stored in the warehouse on shelves in strict adherence to the state standard for this preparation.

compliance also satisfied with the quality of meat bone meal prepared at the Frakhtov meat combine headed by A. I. Ivanov. Laboratory testing of two batches of this meat based on apparent indices (visual appearance, smell, characteristics of ground meat) and according to physical-chemical characteristics (moisture, fat content, ash, protein, non-nitrogen substances and cellulose content) showed that this product meets the standard technical documentation and state standard requirements.

At the same time on a number of enterprises, violations in documentation were revealed in the production of meat bone meal. At the Dnepropetrovsk meat combine (O. A. Kondratyuk, director) the antioxidant Santobin was added to the meat irregularly; other technical violations were also evident. Because of insufficient warehouse storage space, storage conditions of raw materials and finished production do not meet standard requirements. The production laboratory is not fully equipped with measuring and testing technology. The combine has no standardization department.

At the Zaporozhye meat combine (V. P. Ischenko, director) the antioxidant is not added to the bone meal either. Requirements for the storage of finished production are also violated.

Quite a few shortcomings were permitted at the Verkhovizhsk meat combine, under the directorship of V. K. Lyashova'yky. In the first of two batches of meat bone meal tested it was evident that the protein content at a norm of 50 percent was in fact 46 percent; non-nitrogen substances correspondingly 2 and 10.7. In the second batch, the metal impurity violation at a norm of not more than 200 mm were actually 707; protein instead of 42 percent only 40; non-nitrogen substances instead of 27.4 percent.

The basic reasons for the lack of adherence to standard requirements is a violation of technical production discipline. The vacuum line on industrial boilers does not work here, increasing the pulp drying time; it is not conveyed mechanically to be pulverized and sifted. The enteropneum lacks a drive mechanism to mix meat and bone meal, this is done by hand.

The standard technical documentation is incomplete. There are no technological rules for thermal treatment of raw materials. The laboratory lacks equipment and instruments used, therefore, cannot control production quality.

Because of gross violations of state standard requirements in meat bone meal production and the low quality, economic losses have been applied in the margins at the Verkhovizhsk meat combine.

Things are not any better at the dry food shop of the Kirovskiy meat combine in the Kyushaya district (B. P. Potom', director). The shop is

located in a small basement with little space. It does not meet the elementary requirements for steady animal origin food production. The standard for old and in disrepair. There is no storage warehouse for the finished production.

A batch of food production was located at this enterprise. This whole production was rejected because of abysmal animal origin food quality.

Enterprise violation of standard technical documentation, and lack of adherence to state standards lead to the lowering of animal origin food quality, which in its turn leads to a protein imbalance in mixed food production. This affects animal and poultry productivity negatively.

At the enterprise, however, animal origin food production steps, especially meat bone meal, are to be found in the "backyard"; they are properly equipped. Their work is subsequently checked by specialists, and combined administration as well as production administration of the meat industry, the main administration of meat industry (H. Ya. Vorobyev, chairman) MMR (Agriculture Ministry) - Meat and Dairy Industry (H. Ya. Vorobyev). This is one of the chief reasons for the low quality production.

The impression is that there is no one at the meat combine and administration of meat industry who could concern himself with an increase in the quality of animal origin food.

The mixed food industry is at present experiencing a shortage of meat bone and bone meal. Being aware of this, individual meat combines are convinced that mixed food factories will take everything that the enterprises produce without concern for quality.

Produce from enterprises of mixed food factories should absorb the quality control of animal origin food meeting from meat combines. In case of their not meeting set standards, mixed food enterprises must report these complaints to the suppliers. We fear that this approach to the important matter will reduce the responsibility of the enterprises of the Ministry of Meat and Dairy Industry of the U.S.S.R. for the preparation of high quality production.

The republic's Ministry of Meat and Dairy Industry, in our opinion, has to review the preparation of animal origin food on the enterprises and to apply measures towards improving their work.

Yak  
Nov. 1988

## **LIVERDISE**

### **PROBLEMS, PROGRESS IN MAINTAINING HEALTH OF NEW BORN CALVES**

Review of 'MAYA ZHIZN' in Russian 5 Feb 60 p. 2

(Article by V. Urban, Academician at All Union Academy of Agricultural Sciences named V.I. Lenin. "Healthy Young Stock - A Productive Herd")

[Text] It happens that a calf is born. It is healthy, hearty and, as the saying goes, bubbling over with life. However, after several days have passed it begins to wither away in a sickly manner. The same happens to a second, third, fourth... Finally the veterinary doctor gives his diagnosis, almost in the spirit of a severe sentence: toxic dyspepsia. Such a diagnosis is frightening. Indeed almost all animals (even new born calves) very weak and emaciated causes their deaths.

Scientists, veterinarians and zootechnicians have carried out many studies and they have revealed the causes of this phenomenon. The prenatal development of a calf is completely dependent upon how well the cow feeds it during this period the cow is not supplied with a sufficient amount of full value and high quality feed, the calf will suffer.

In particular, a great amount of importance in this regard is attached to the last months of pregnancy - the eighth and ninth months. This is why it is so important to ensure that pregnant cows are fed in a timely manner and allowed to exercise actively. It is dangerous during this period to supply them with feed containing poisonous substances. Cotton seed cake (poisoned is found in it at times), poor silage (containing lactic acid) and similar substances. During the dry period the udder of a cow is capable of accumulating poisonous substances that are delivered together with the food and these substances enter the organism of a new born calf with the very first portion of colostrum.

In addition to being a nutritional medium, colostrum also protects calves against the effects of harmful factors. All of the protective antibodies produced by a cow are transmitted to the colostrum. These antibodies, which are assimilated by a new born calf in a stable form, enter its blood and protect the calf against harmful microorganisms and toxins.

colostrum contains substances which possess a real anti-infective effect of the lysozyme type. This is why, when colostrum enters the stomach on a timely basis, the microflora in it develops in a strictly set manner. Favorable conditions are created here for the propagation of useful lactobacilli and unfavorable ones for the harmful microorganisms. In addition, the colostrum contains many vitamins.

Let us take vitamin A. Immediately following birth, the amount of vitamin A in a newly-born calf is insignificant. This amount is supplemented with the first portion of colostrum. If we arbitrarily accept the amount of vitamin A in the first portion as being equal to 100, then in the fourth portion it will be only 10 percent. Thus, in order to prevent disease, a calf should be fed as much colostrum as possible and as early as possible, during the first 24 hours. However, it must be borne in mind that a single over-feeding of a calf is very harmful. Rather, the dosage of colostrum should be increased by more frequent feedings. Ideally, it should be given 6-8 times during a 24 hour period. The colostrum must always be fresh and have a temperature of no lower than 16 degrees.

Recently the farms have been making more frequent use of cattle yard boxes for their calving operations, with the calves remaining with the cows during their first days of life for nursing purposes. This method reduces sharply the morbidity rate for calves and it prevents dyspepsia.

This disease arises when, owing to a metabolism breakdown and a shortage of digestive juices and ferments, conditions are created which bring about a change in the composition of the microorganisms in the upper intestine. Pathogenic microflora accumulate here and feed decomposition with the formation of toxic substances. The microbes change their properties and become pathogenic, with a mutual intensification of the harm they cause taking place in communities of such microbes. Although these microbes do not individually affect animals or cause them to become poisoned, nevertheless, when in associations their pathogenic properties are so strong that even in comparatively small dosages they lead to the destruction of laboratory animals. This has been borne out repeatedly in experiments. The greater the number of these microorganisms in the environment, the easier they are able to penetrate the organism of a calf and the more severe the disease and the greater difficulty encountered in achieving recovery.

A concentration of animals in a small area (and this is typical of winter maintenance) creates conditions for the accumulation of microorganisms in the environment. Endless passing back and forth (transmitting from one animal to another) changes their properties. A specific infectious disease arises based upon the particular conditions prevailing on a farm. The causative agent can be different microorganisms - viruses, bacteria or fungi.

What conclusions can be drawn from the above. First of all, it is completely clear that in a disease of calves, regardless of the soil on which it may

develop, microflora participate actively. It can quickly become active, accumulate in large quantities and complicate the course of the disease. And if timely and efficient measures are not undertaken, a specific infectious disease may flare up that will be very difficult to combat. Hence, the veterinary sanitary rules must be observed in a very strict manner if calf diseases are to be prevented. However, microorganisms must not be allowed to accumulate in the birth departments or veterinary dispensaries, particularly on large farms and complexes where this danger is especially great.

Definite measures should ideally be carried out for the purpose of preventing the accumulation of microorganisms and for disrupting the epidemic chain. Thus, on large farms where more than 200 cows are maintained, no less than two birth departments should be built. When one is occupied, the other is undergoing cleaning or disinfecting. Thus a very important condition of animal husbandry is observed. The operation of facilities according to the principle "everything in operation, everybody busy."

The birth department is maintained in an especially clean and orderly manner: all excretions are removed immediately and the contaminated sections of the floor or walls disinfected. All dishes in the department are disinfected daily using the boiling method. The udder of the udder of newly calving cows is washed with a warm disinfecting solution prior to milking and the first jets of the colostrum and milk are squeezed into a separate container. Ideally the operational period for the department should be reduced to a minimum, so that only one group of animals passes through it without interruption. If, for example, the department was developed for 20 animals, then it should never be filled in excess of this number.

The veterinary dispensaries for calves on large farms must have isolation sections (no less than four). A section is filled with calves as rapidly as possible and in any case for no longer than 14 days. The calves are kept in individual cages, to which are fastened small milk cans with a nipple for milk. All dishes are cleaned and sterilized using the boiling method. All calves are removed simultaneously from the section and subsequently it is cleaned, washed, disinfected and dried out. The principle "everything in operation, everybody busy" is also in operation here.

The leading farms have developed an entire series of measures aimed at ensuring healthy offspring and the efficient prevention of diseases in newly born calves. These measures are based upon the strictest control and maintenance of pregnant cows and calves, a high degree of hygiene in the carrying out of calving, correct feeding of newborn calves, preventing calves from being harmed by microflora and also highly skilled animal husbandry personnel.

## LIVESTOCK

### MILK PRODUCTION PROCUREMENTS IN ALTAYSKIY KRAY

Moscow PRAVDA in Russian 16 Feb 80 p 1

[Article by V. Sapov (Altayskiy Kray): "How To Repeat Experience"]

[Excerpts] There are many other experts throughout the kray who are achieving new heights.

Milk procurements have increased in Altayskiy, Zav'yalovskiy, Shipunovskiy and a number of other rayons. At the same time, milk sales in Zarinskiy and Tyumentsevskiy rayons was almost two times less than the figure for the same period last year. The daily milk yields on farms in Krasnogorskiy and Mikhaylovskiy rayons decreased by one third.

What caused these decreases? Indeed a majority of the sovkhoses and kolkhoses throughout the kray have adequate quantities of coarse and succulent feed at their disposal. Quite often the forage is consumed in an inefficient manner. For example, one half of the farms use straw in an unprepared form. Only rarely is use made of carbamide additives or yeasting of fodder. The low level of zootechnical work also exerts an adverse effect. On farms in Kosikhinskiy and Yel'tsovskiy rayons the barrenness of the cows reaches 23-25 percent.

As is known, success in any endeavor is achieved on the basis of well thought out organizational work. Formerly the Vlast Truda Sovkhoz was considered to be an efficient enterprise. Gradually its indices began to deteriorate. The farm's leaders and specialists display very little concern for the working conditions or for the cultural and domestic services being made available for the workers. A club in the Fourth Department was closed down. No facilities were available in which to conduct lectures. Only rarely did the propaganda team visit the livestock breeders. The recreation and reading room was neglected.

The leaders of the Soloneshenskiy Sovkhoz neglected the road leading to the farms. Last year the truancy here amounted to approximately several thousand man-days. A committee for combating violations of labor discipline,

attached to the Bolousshenskij Village Soviet, and the comrades' courts are not operating. The board of directors and the workers' committee have also neglected this sector of educational work. Attempts by the party committee to restore proper order on the farms amount to nothing more than good intentions.

The competition serves as a fine means for repeating experience. The Sibirskiy Ognj Sovkhoz in Zarinskij Rayon is praised for its fine experts in the production of milk. Here the milk yields are increasing in a stable manner and improvements are being realized in the farm indices. Last year the farm over-fulfilled its plan for the sale of milk to the state. Approximately 60,000 rubles of profit were realized from the sale of this product. Yet the collectives of the neighboring Iment Zhdanov, Iment Tal'man and Rodina kolkhoses fell behind in their deliveries of many products to the state.

These contrasts were discussed on more than one occasion from the tribune of plenums of the Zarinskaya Municipal Party Committee and during rayon conferences for specialists. There was one solution: develop feed production similar to the manner in which this work is being carried out at the Sibirskiy Ognj Sovkhoz. Nevertheless, the remaining farms are still just studying this valuable experience. Even the existing feed preparation shops are being utilized to only one half their capability or not at all. For example, this is the third year that such a shop at the Za Kommunizm Kolkhos has not been in operation. Meanwhile, the rayon agricultural administration has reported that all of the feed preparation shops are operating at full capability.

Last year the kray's farms did not fulfill their plan for selling milk to the state. Compared to 1978, milk production during 1979 increased by only 1 percent. An average milk yield of 2.177 kilograms was obtained from each cow. The agricultural administration of the kray executive committee was responsible to a considerable degree for such low rates of growth. It exercised only weak control over lower subunits and it did not devote sufficient attention to the organization of work in the various areas.

Good milk production does not develop of and by itself. Leading workers must be developed by creating the conditions required for a true working rivalry. The experience of the best workers and farms must be made available to all farm collectives.

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## LIVESTOCK

### MILK PRODUCTION PROBLEMS IN KUYBYSHEVSKAYA OBLAST

Moscow SOVETSKAYA ROSSIYA in Russian 6 Mar 80 p 1

[Article by A. Bochkarev (Kuybyshevskaya Oblast): "Experience of Leading Workers -- For Each Farm"]

[Text] Winter in the central Volga region was calm, with snowstorms appearing only infrequently. However, these snowstorms did not hinder the successful carrying out of the livestock wintering program. Feed was supplied to a majority of the farms and complexes in advance, during the autumn months. Approximately 500 feed preparation shops and feed preparation houses are operating in a reliable manner.

The First Secretary of the Volzhskiy Rayon Party Committee, N.N. Rozhnov, stated:

"The wintering is proceeding normally and the people are working in a confident manner. When discussions were held on the farms concerning the degree of the CPSU Central Committee, the USSR Council of Ministers, the AUCCTU and the Komsomol Central Committee on launching a competition among the livestock breeders, all of the possibilities were thoroughly weighed. Our chief reserve is that of high quality feed preparation. This is why this problem was under the control of the party organs from the very beginning of the wintering program. As a result of such attention, the rayon's entire milking herd -- more than 23,000 cows -- is being supplied with feed that is delivered only in a prepared form. We are making full use of various additives, including malt and pulp residues obtained from processing enterprises in the city. All of this confirms our estimates and at the same time it ensures the successful carrying out of the plans and obligations of the farm collectives."

Great importance is also attached to other factors -- breeding work, the formation of a herd and achieving increases in the milk yields of cows. At the present time, it is by no means an accident that during this period of mass calving operations the farms in Volzhskiy Rayon are making extensive use of the experience of the livestock breeders of the Progress Kolkhoz, who

have already introduced a system of departmental organization of farm operations. For 3 years now a dry cow yard, a birth department and a calf yard have been in operation here, with the animals being maintained on a special ration and receiving special care. In the milking yard, upon which the productivity of a herd is dependent in the final analysis, each milkmaid is interested from both a moral and material standpoint in achieving high yields -- only after this has been accomplished are their animals transferred to the industrial herd.

This type of production organization is being introduced into operations successfully at the present time by the livestock breeders at the Pobeda and Put' Lenina kolхозes, at the Soyuzhiyayevskiy and Rubeshnyy sovkhoses and at other farms throughout the rayon. And this has produced results: 40 percent of the milking herd is producing up to 4,500 kilograms of milk annually and 2,600 cows -- up to 3,500 kilograms. Control is being exercised over animals producing milk yields of 5,000 to 7,000 kilograms of milk.

During the winter the livestock breeders devoted special attention to the quality of the milk and they succeeded in raising the first quality output to 93 percent.

The example set by the Volga region natives in the complex solving of the tasks outlined in the resolution of the CPSU Central Committee, the USSR Council of Ministers, the AGOCTU and the Komsomol Central Committee, concerning the competition of the livestock breeders during the 1979-1980 wintering period, serves as a fine reference point for all rayons in the oblast. As a result of feed processing, which makes it possible to use a forage reserve in the proper manner and with the greatest return, intensive increases in milk yields, the introduction of progressive livestock maintenance methods and the selection of pedigree and high yield cows for the industrial herd, the livestock breeders in Privolzhskiy, Isaklinskiy, Kiyavlinskiy, Chelno-Vershinskiy and Khvorostyanskiy rayons are presently obtaining more milk than they did in January and February of last year.

However, a certain reduction is being observed in milk production throughout the oblast as a whole compared to the level for last year. This is occurring mainly owing to the fact that individual kolхозes and sovkhoses have fallen sharply behind. The leaders of these farms are not attaching sufficient importance to leading experience, they are employing antiquated methods, they are shirking their wintering difficulties and they are blaming the shortcomings noted in organizing the work of the farms on feed shortages and inclement weather.

A snowstorm raged for 2 days over the fields at the Sovkhoz Imeni Dzerzhinskii in Krasnoyarskiy Rayon -- the roads were covered over in some areas and snow drifts accumulated near cow barns and in exercise yards. Subsequently, fine weather prevailed once again. But the snowstorms and drifts were such that the operational rhythm of the farms was disrupted for an extended period of time.

The weather let us down," complained the director of the sovkhos, Yu. P. Tashov. The feed preparation shop was buried under a snow drift and we had to cease operations. The straw supplied to us had to come from a point 20 kilometers distant and at the present time we are unable to reach the place -- snow drifts. Moreover, as luck would have it, the bulldozers broke down and thus no equipment is available for clearing the roads.

At the time the director made the above statement, 3 days had already elapsed following the snowstorm, during which period of time the cows at the central farmstead of the sovkhos in Beloserska Village had been supplied with almost no coarse feed whatsoever. Yet, prior to the start of the wintering campaign, the sovkhos leaders had counted upon the availability of such feed -- the farm's straw requirements were met by 150 percent and silage by only 61 percent. Thus it is difficult to discuss milk yields here. 9-10 kilograms of milk are presently being obtained per cow at the sovkhos named Daurzhinskly, two times less than that for the neighboring Volzhskiy Rayon. Thus, this threatens to disrupt fulfillment of the plan at the sovkhos as well as throughout Krasnoyarskiy Rayon as a whole.

Such a situation develops only in an atmosphere of insufficient conscientiousness and strictness on the part of the local party and economic organs. For it is they who are responsible for instilling in the farm leaders and specialists a high sense of responsibility for the wintering campaign, for ensuring the extensive dissemination and introduction of the experience of leading farms and rayons throughout the oblast and to make this experience available to each farm, kolchos and sovkhos. This then represents the main guarantee for achieving success in the development of animal husbandry and in increasing the production of goods.

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## LIVESTOCK

### DECREE ON PRODUCTION, USE OF DAIRY PRODUCTS DISCUSSED

Moscow IZVESTIYA In Russian 1 Mar 80 p 2

[Article: "Development of Dairy Industry"]

[Text] The CPSU Central Committee and the USSR Council of Ministers have examined the problem concerned with further improving the use in the dairy industry of skimmed milk, buttermilk and whey and increasing the production of dairy products for the population and protein feeds for animal husbandry and they have adopted an appropriate decree in this regard.

Large scale measures are outlined in the decree for ensuring proper utilization of milk procured by the state. The industrial processing of skim milk and buttermilk must be increased from 14 million tons in 1978 to 25 million tons in 1985 and whey — from 2 to 11 million tons respectively. Considerable increases will take place on this basis in the output of cream for non-fat and low-fat dairy products and also for feeds used in animal husbandry.

Tasks have been established for placing capabilities in operation, during the 1981-1985 period, for the production of dry skim milk, whole milk substitutes and dry whey and also tasks for the production of the required technological equipment.

The USSR Ministry of the Meat and Dairy Industry is obligated to ensure the technical re-equipping of existing enterprises, the creation of highly mechanized and automated production efforts (departments), involving the complete processing of skim milk, buttermilk and whey, and also the introduction of new and improvements in existing technological processes for the microbiological processing of skim milk and the production from it of milk protein concentrates, semi-finished goods for baking and confectionery products, ice cream, carbonated non-alcoholic drinks and other products.

The councils of ministers of the union republics, the USSR Ministry of the Meat and Dairy Industry and the USSR Ministry of Agriculture must implement measures aimed at raising the efficiency of use of skimmed milk in animal husbandry.

Capital investments in the amount of 1.1 billion rubles and considerable material-technical resources are being allocated for the creation of a production-technical base for the processing of secondary raw materials in the dairy industry for the Eleventh Five Year Plan.

The central committees of the communist parties of union republics and the kray and oblast committees must devote greater attention to those problems concerned with the development of the production-technical base for the complex processing of skimmed milk, buttermilk and whey and increasing the production, expanding the assortment and raising the quality of the non-fat and low-fat dairy products and the protein feeds for animal husbandry. In addition, they must actively support the extensive dissemination of the creative initiative of leading collective brigades and specialists in solving these tasks.

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Kiev NII'S'KI VISTI in Ukrainian 10 Jan 80 p 1

[Article by H. Fedorova, doctor of agricultural sciences, Zh. Holovashchuk, candidate agricultural sciences, workers at the Ukrainian Scientific-Research Institute of Agriculture on: "Top Dressing Winter Crops"]

[Text] Winter crops entered the winter period basically in good and satisfactory conditions. With appropriate care and favorable wintering these crops can provide a good harvest.

Leading farms applied a considerable amount of fertilizer prior to sowing to ensure normal wheat growth and development. This use of mineral fertilizer promotes effective plant utilization of nutrients and moisture.

Farms which did not apply fertilizer under winter crops prior to sowing, top dressed them in the fall (during plant vegetation) with nitrogen, phosphorus and potash fertilizer. Still, according to data from the Scientific-Research Institute of Agriculture and Livestock Raising of the Western Ukr SSR Rayons, harvest increases in the podzol-type chernozem from fall top dressing of winter wheat with full fertilizer (30 kg activated nitrogen per hectare, phosphorus and potash fertilizer) on the average for three years amounted to 6 percent per hectare, when the basic application of the same amount of nourishment yielded ...

In conditions of irregular moistening at the Dnipro research station in the Cherkasskaya oblast basic application of full fertilizer yielded 4.1 quintals of winter wheat per hectare, fall top dressing provided only 2.4 quintals.

Spreading mineral fertilizer over the sowing area (after plant vegetation ceases) markedly reduces the effectiveness of this agricultural measure. Top dressing winter crops in the winter leads to great nutrient losses during spring floods and pollutes rivers and reservoirs with chemical compounds. Therefore, there is no point in fertilizing snow covered fields with mineral fertilizers in the winter. This applies primarily to the forest-steppe and woodland zones. In the fields of the Myronivsky

Scientific-Research Institute of Selection and Wheat Seed Production, winter crop increases of grain were as follows: early fall topdressing with nitrogen, phosphorus and potash fertilizer - 4.4 quintals per hectare; late fall - 1.7, spreading mineral fertilizer over snow - 2.5, early in the spring - 4.9 quintals per hectare.

In the southern oblasts (Krymchaya, Khersonskaya, and where there is usually no snow in the winter, and winter crops vegetate in December and even January, crops may be fertilized even in the winter. The experience of this agricultural measure is confirmed by data from the Ukrainian Scientific-Research Institute on Irrigation Agriculture. Applying in January 30 kg of activated nitrogen fertilizer per hectare an increase of 4.8 quintals of grain per hectare was obtained, after spring (March) top dressing - 5.3 quintals per hectare.

Application of mineral fertilizer to crops in early spring over partially frozen soil has become traditional. This topdressing is more effective than in the fall in the sufficient moisture zone, but is not as effective in zones with unstable and insufficient moisture, where, even if the work is slightly delayed, the fertilizer reaches dry soil, and plants cannot utilize it early.

Winter crops which were not fertilized in the fall (especially if they were allocated after unfallow predecessors) in the spring are spread with 40-60 kg of activated nitrogen fertilizer per hectare and 30-40 kg phosphorus and potash. Nitrogen fertilizer should be applied to crops fertilized in the fall with phosphorus, potash or full fertilizer. Their doses will depend on the amount of nitrogen fertilizer already applied, the predecessor, and the stage of plant development. It must be remembered that application of above norm nitrogen fertilizer can lead to an intensive accumulation of the vegetative mass, and later to crop lodging, and grain shattering (especially the "Myronivka-808" and "Odeska-51" varieties).

Therefore, under wheat allocated to clean and occupied fallows, where the plants entered winter in a well-developed stage, not more than 30 kg of nitrogen are applied per hectare in the spring using the method (with disk seed drills); under fertilized winter crops sown after unfallow predecessors 40-45 kg are applied.

To increase the harvest and improve the seed quality of the intensive varieties ("Illichivka", "Polis'ka-70") in the sufficient moisture zone, an additional topdressing should be done (during the stem elongation phase) with nitrogen fertilizer, if a sufficient amount was not applied in the fall.

HOW TO LIVE FOR THE WINTER CROP GROWTH

Kiev SIL'S'KI VISTI in Ukrainian 12 Mar 60 p 1

[Article by V. Ghenskal, head of the Grain Department, Ukr SSR Ministry of Agriculture on: "Accelerated Winter Crop Growth"]

[Text] The most important goal in agriculture is an increase in the green grain harvest. Its overall level of production and sale to the state is determined by the winter wheat harvest. The productivity of this most valuable feed crop depends to a large extent on its safe wintering and especially on its condition during the winter-spring period.

One of the basic prerequisites for increasing the winterhardiness and yield of winter crop fields is the creative application of the agrotechnological complex which provides for timely appearance of uniform, even shoots and a good development of the plants in the fall. However, there are some winters when unfavorable weather conditions (ice crusts, a marked temperature drop at the tillering node level) cause damage even to these crops.

It is, therefore, important to systematically inspect the winter crop condition, utilizing whatever agricultural measures are needed to lessen the damaging effects of unfavorable weather. The degree of crop damage on individual fields must be determined then as well as the expediency of overseeding or reseedling them.

In addition to monolithic growth, plant capacity to live is determined by less laborious, quick diagnostic methods especially water, sugar solution, coloring with fuchsin acid and the meristematic method. All of these are described in special literature. Yet, these methods are not quite trustworthy; they should be used for obtaining approximate data during very changeable weather.

One of the quick methods to determine plant capacity to live is the method of the system developed by the Donskoy Scientific-Research Institute of Agriculture. It gives results in 16-24 hours. Plants taken out of soil are washed, the roots are completely removed, the leaves - one and

a half cm from the tillering node; if the wheat has not tillered, then the length of cut plants should be 2 cm. Plants are then placed in a glass or plastic 0.5 - 1 liter container. A layer of moistened cotton, cheese cloth or filter paper is placed at the bottom, 50 plants are put in each container. The container is covered with glass, cardboard, plywood or pellicle.

Plants are kept in a 24-26 degree temperature for 16 hours, then at 10-15 degrees for 24 hours. This growing process can be accomplished in darkness or light. Healthy plants grow 8-15 mm because of the meristematic tissue. Plants with a growth of less than 3 mm are counted as lost. In recent years this method has been successfully practiced on farms in the Northern Caucasus.

A final review of the state of winter crops in the Rostovskaya oblast is accomplished through the method of temporary small hotheds. A square wooden frame is constructed 10-15 cm in height, the length of one side is one meter. The top part of the frame is covered with polyethylene film. This type of microhethed is set up in specific places in winter crop fields immediately after snow melting or two-three weeks prior to the expected beginning of spring vegetation. At that point the lower frame portion is covered on the outside with soil, manure or sand.

Under the influence of sun rays the soil in the frame thaws quickly and winter crops renew their vegetation a few days earlier than in the field. This is quite a dependable method of determining crop survival, the sprouting intensity of the above ground mass and roots of wheat. This method of determining winter crop living capability in the last phase of wintering should be widely utilized on the farms of our republic.

## SELECTIVE LIST OF IPRS SERIAL REPORTS

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USSR REPORT: Economic Affairs  
USSR REPORT: Construction and Equipment  
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USSR REPORT: Political and Sociological Affairs  
USSR REPORT: Energy  
USSR REPORT: International Economic Relations  
USSR REPORT: Consumer Goods and Domestic Trade  
USSR REPORT: Human Resources  
USSR REPORT: Transportation  
USSR REPORT: Translations From KOMMUNIST\*  
USSR REPORT: PROBLEMS OF THE FAR EAST\*  
USSR REPORT: SOCIOLOGICAL STUDIES\*  
USSR REPORT: USA: ECONOMICS, POLITICS, IDEOLOGY\*

### USSR SERIAL REPORTS (SCIENTIFIC AND TECHNICAL)

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USSR REPORT: Life Sciences: Effects of Nonionizing Electromagnetic Radiation  
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### WORLDWIDE SERIAL REPORTS

WORLDWIDE REPORT: Environmental Quality  
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